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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/561,854

12/21/2005

Jozef Thomas Van Beek

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NXP, B.V.

NXP INTELLECTUAL PROPERTY & LICENSING

M/S41-SJ

1109 MCKAY DRIVE

SAN JOSE, CA 95131

EXAMINER

ROJAS, BERNARD

ART UNIT

PAPER NUMBER

2832

NOTIFICATION DATE

DELIVERY MODE

01/25/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No. 10/561,854	Applicant(s) VAN BEEK ET AL.	
	Examiner BERNARD ROJAS	Art Unit 2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-9, 11-15 and 18-21 is/are rejected.
- 7) ☒ Claim(s) 6, 10, 16 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Embodiment 2, Claims 1-8 and 13-21, in the reply filed on 10/28/2009 is acknowledged. The traversal is on the ground(s) that the case is a U.S. national stage of a PCT under 35 U.S.C 371. This is found persuasive; the restriction requirement dated 10/28/2009 is whereby withdrawn.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 5, 7-9, 13-16, 20 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Kong et al. [US 6,218,911] figures 1-4h.

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Claim 1, Kong et al. discloses an electronic device [20] comprising a microelectromechanical system (MEMS) element [figure 1], the element comprising first [28] and second [26] electrodes and an intermediate beam [24] with first and second opposing conductive side faces, the first side face [left side of 24] facing the first electrode [28] and the second side face [right side of 24] facing the second electrode [26], which beam [24] is movable by application of a driving voltage [+5V DV, by 34 and 36] between said first [28] and second [26] electrodes [figures 2 and 3], characterized in that: the second electrode [26] and the second conductive side face of the beam [right side of 24] form with an intermediate dielectric [68, see figure 4h] a first switchable capacitor that is connected in a signal path between an input [RF in] and an output [RF out, col. 3 lines 36-44], and the first electrode [28] and the first side face of the beam [left side of 24] form with an intermediate dielectric [68, see figure 4h] a second switchable capacitor, that is coupled from the signal path [RF in] to ground [through terminating resistor 42, col. 3 lines 44-51].

Claim 2, Kong et al. discloses an electronic device as claimed in claim 1, wherein the beam [24] is embodied as a third electrode [col. 3 lines 16-25].

Claim 5, Kong et al. discloses an electronic device as claimed in claim 1, wherein the electrodes [24, 26, 28] are present in planes substantially parallel to a substrate [22, see figure 4h]

Claim 7, Kong et al. discloses an electronic device as claimed in claim 1, wherein the conductive side faces [left and right sides of beam 24] of the beam [24] are

connected to the input [RF in] and the first electrode [26] functions as the output [to ground, see figure 3].

Claim 8, Kong et al. discloses an electronic device as claimed in claim 2, wherein the third electrode [24] is provided with an electrically insulating layer [68] at both the first and the second side faces [figure 4h].

Claim 9, Kong et al. discloses an electronic device comprising a microelectromechanical systems (MEMS) element [20] provided on a substrate [22], comprising first [28] and second [26] electrodes, which electrodes [28,26] are provided in planes that are substantially parallel to the substrate [22, see figure 4h], an intermediate beam [24] being provided between said first [28] and second [26] electrodes, said intermediate beam [24] having first and second opposing conductive side faces [left and right sides of 24], the first side face [left side of 24] facing the first electrode [28] and the second side face [right side of 24] facing the second electrode [26], which beam [24] is movable by application of a driving voltage [+5V DC, via 34 and 36] between said first [28] and second [26] electrodes [figures 2 and 3]; characterized in that the first and second conductive side faces [left and right sides of 24] are part of the same electrically conductive layer being a third electrode [24, col. 3 lines 16-25].

Claim 13, Kong et al. discloses an electronic device as claimed in claim 2, wherein the third electrode [24] is substantially elastic [see figures 2 and 3], such as to be attachable with a first surface area [right side of 24] at one edge to the second electrode [26, figure 2] and with a second surface area at [left side of 24] an opposite

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edge to the first electrode [28, figure 3], and such that on application of an actuation voltage the ratio of first to second surface area is changeable [figures 2 and 3].

Claim 14, Kong et al. discloses an electronic device as claimed in claim 6, wherein the first electrode [28] is defined in a layer in which also an inductor is defined [col. 3 lines 36-51].

Claim 15, Kong et al. discloses an electronic device as claimed in claim 2, wherein the first (30) and the third (220) electrodes are defined in layers, in which also the electrodes of a thin film capacitor [blocking capacitors 30 and 40] are defined.

Claim 16, Kong et al. discloses an electronic device as claimed in claim 6, characterized in that the first electrode [28] is constructed as a bridge with supporting spacers on the substrate [22, as seen in figure 4h, 28 is defined as a bridge with and anchored end and a free end suspended over the substrate].

Claim 20, Kong et al. discloses use of the electronic device according to claim 1, for RF applications, wherein the beam [24] is driven by a driving voltage [+5V DC] towards or from the first electrode [28, figures 2 and 3].

Claim 21, Kong et al. discloses a method of driving an electronic device as claimed in claim 1 by application of an actuation voltage [figures 2 and 3, +5V DC via 34 and 36].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3, 4, 11, 12 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kong et al. [US 6,218,911].

Claims 3 and 11, Kong et al. discloses the claimed invention except for the claimed surface area of the second electrode. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the surface area of the second electrode in order to adjust the electrostatic force created by the +5V DC applied to the electrode. Reducing the surface area of the second electrode would result in a lower electrostatic attraction between the second electrode and the moveable member as compared to the first electrode and the moveable member given the same +5V DC actuation voltage yielding a weaker closing force and a larger opening force..

Claims 4 and 12, Kong et al. figures 1-4h discloses the claimed invention with the exception of the second electrode being subdivided into individual segments.

Kong figures 5a-5b teaches a micro-switch wherein both the first and second electrodes are subdivided into individual segments [80/82 and 84/86 respectively].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to subdivide the second electrode of Kong et al. figures 1-4h as shown by figures 51-5c since the equivalence of one electrode being replaced by several smaller electrodes for their use in the electrostatic actuation of a micro-switch art is well known. The selection of any of these known equivalents to actuate the micro-switch would be within the level of ordinary skill in the art.

Claims 18 and 19 contain "intended use" functionality language such as: the Mems element as part of an impedance matching network or a front end module with a power amplifier and a Mems element. Kong et al. discloses the claimed Mems switch structure; its use in various electronic devices would have been obvious to one of ordinary skill in the art at the time the invention was made. Applicant is advised that "intended use" language in the claims does not add any patentable weight.

Allowable Subject Matter

Claims 6, 10, 16 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BERNARD ROJAS whose telephone number is (571)272-1998. The examiner can normally be reached on M and W-F, 10:00-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin G. Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)? If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elvin G Enad/
Supervisory Patent Examiner, Art Unit 2832

Br
/Bernard Rojas/
Examiner, Art Unit 2832